FEDERAL AVIATION ADMINISTRATION (FAA)
LOGISTICS CENTER

ENCLOSED PAINT BOOTH INSTALLATION

STATEMENT OF WORK

INTRODUCTION

The technical requirements for materials and the performance of work as required under this contract are contained in this document. This document contains the basic scope of work and some technical requirements.

Contracting Officer (CO) – The person assigned to this contract as the CO will be the only individual with authority to speak for and contractually bind the FAA. All communications, authorizations, approvals, changes, modifications, etc., involving this contract, will be with and through the CO. Any action not approved by the CO will not bind the FAA.

Contracting Officer's Representative (COR) – The CO may assign a COR to oversee the work on the project and act as a technical point of contact. A letter detailing the COR's responsibilities and authority will be issued when a COR is assigned.

1. PROJECT LOCATION

Work for this contract must be performed in the Logistics Support Facility (LSF) at the Mike Monroney Aeronautical Center (MMAC) in Oklahoma City, OK. It is located at the intersection of Duke Avenue and SW 64th St.

2. SCOPE

2.1 General

This specification covers the requirements for the installation of an enclosed paint booth inside the LSF. The Contractor must provide all labor, materials (unless noted otherwise in the contract documents), and specialized equipment as necessary to perform the work described herein.

2.2 Description of Work

All work to be accomplished includes the following:

Provide and install a new enclosed paint booth that is fully operational in accordance with specifications in a vacant section of the paint shop in LSF Building #2.

3. ENCLOSED PAINT BOOTH TECHNICAL REQUIREMENTS

3.1 Paint Booth Overview

The contractor must construct and install an enclosed paint booth in an indoor warehouse area that is 40' (north to south) x 19' (east to west) with a height of 16.25' and is bordered by a wall on the south side. The paint booth and the product door must be large enough to accommodate the ASR-11, an antenna with the following dimensions: 16.5' L x 8.5' W x 11.5' H. The interior paint booth size must be a minimum of 32' L x 15' W x 13' H, the maximum interior paint booth size must be 36' L x 16' W x 14' H. The exterior dimensions will be constrained by the available space, a drawing is attached. The booth must contain 4 personnel doors, two for each section when the booth is divided in two by an accordion door. The two personnel doors on the eastern side of the booth must contain windows. The product door must be a 4 panel bi-fold door, with two bi-fold door panels on the left side and two bi-fold door panels on the right. The product door must be on the north side of the booth and must have dimensions between 14' W x 13' H and 14' W x 14' H.

3.2 Paint Booth Interior and Exterior Finish

The paint booth panels must be constructed of galvanized steel painted white, inside and out. A white peel coat must also be applied on the interior walls of the booth. This peel coating must be removable without damaging the surface finish, so that a future peel coat can be reapplied.

3.3 Floor Finish

The concrete floors in the paint booth area are currently coated with an epoxy coating. This floor coating should be left intact if possible. If the concrete coating is damaged during installation it must be repaired or replaced with a similar epoxy coating.

3.4 Paint Booth Modes-Spray, Cure and Prep

The contractor must provide a paint booth that has a spray mode, cure mode and prep mode. The spray mode temperature range must be greater than 60º Fahrenheit. The cure mode temperature range must be 120º-170º. The paint booth must have an interlock so that spraying cannot be done unless the doors are closed and the fans are providing the necessary airflow in spray mode. Cure mode must not be initiated unless the doors are all closed as well. The prep mode will be activated when the doors are opened and employees are moving product in and out of the booth. In prep mode the intake fan will be off and the exhaust fans will be running at a very low speed, the in-booth temperature should reach equilibrium with the interior warehouse temperature after 10 minutes.

3.5 Make-Up Air System

The contractor must install a make-up air system which allows for balanced air flow. The make-up air system equipment must be located outside the eastern wall, elevated above the ground and supported independently from the facility structure. Fans with variable frequency drive must be installed in the make-up air system so that the fan speed can be dropped during cure mode, and at other times when needed. A duct smoke detector must be installed in the make-up air system.

3.6 Outdoor Work
The contractor must determine the size and location of the required eastern wall penetrations. The contractor must determine the size and location of the make-up air system mounted directly outside of the eastern wall and supported independently of the building. The contractor must also determine the size and location of anything else that must be placed outside of the eastern wall. The MMAC Architecture and Engineering Division (AMP-400) will be responsible for completing all penetrations of the eastern wall. The contractor must provide documentation on the outdoor work to be performed to the CO and AMP-400 for review (see section 3.19). AMP-400 will cut the wall penetrations required by the contractor as part of the site preparation. AMP-400 will also complete a soil test east of the building and provide the information to the contractor for the purpose of designing piers to support the make-up air system. Exhaust and intake ducts must be installed in such a way as to prevent the exhausted air from being pulled directly back inside the booth by the intake fan. Exhaust and intake ducts and all installed equipment on the outside of the building must comply with Oklahoma wind loading.

3.7 Ventilation Method
The paint booth must utilize cross-draft ventilation method. The direction of the airflow will be east to west, while the product will be moved in and out through the product door on the north of the booth. The booth must allow for the temporary partitioning of the painting area into two equal sections where multiple smaller items can be painted simultaneously. The partition must be moveable floor to ceiling accordion doors, allowing for the full use of the space when a large item is to be painted, and allowing for two separate spaces when smaller items are painted. The physical barrier must prevent overspray from travelling from one section to another, it is not necessary that the ventilation be completely segregated by section.

3.8 Airflow Requirements
The paint booth must have adequate airflow and comply with Occupational Safety and Health Administration (OSHA), National Fire Protection Association (NFPA), American National Standards Institute (ANSI), Federal, State and local regulations. The paint booth must intake ventilation from the outdoors through the eastern wall and the paint booth must exhaust ventilation to the outdoors through the eastern wall. Appropriate steel ductwork must be installed. The eastern wall is 50’ from the paint booth and the ductwork must be 11’ to 17’ high in order to not interfere with work in the shop to the east.

3.9 Filtration Requirements
The paint booth must have filtration in compliance with OSHA, NFPA, ANSI, Federal, State and local regulations. Dry filters are to be used for filtration. The main paints applied in the booth will be polyurethane, acrylic enamel and lacquer based paints. The filters installed must be compatible with these types of paint. Manometer(s) must be installed in order to determine when the filters need to be changed.

3.10 Paint Drying
The make-up air system must contain a natural gas heater capable of elevating the booth temperature to a constant level acceptable for cure mode (120° to 170°). The heater must be capable of heating air from 70° to 150° in 20 minutes. The natural gas heater must also be used to ensure that the in-booth temperature never drops below 60° in spray mode. The contractor must install the heater and connect to FAA provided natural gas source within 20' of the heater. The heater must be properly ducted into the booth.

3.11 Lighting
The paint booth must comply with the following lighting requirements. The lighting must have a color rendering index between 70-90, light temperature between 4500-6500 on the Kelvin scale, with a foot candle power between 100 to 150 measured at a height of 36" from the floor. The light fixtures must be flush or low profile, they must not extend out from the ceiling or walls.

3.12 Electronic Control Panel
The contractor must install an electronic control panel on the exterior of the booth. The controls must allow switching between spray mode, cure mode, and prep mode. Spray mode must have controls to allow for temperature control. Cure mode must have controls to allow for temperature control and airflow control. In both spray and cure modes however, the temperature can't be decreased below the outdoor temperature due to the lack of air conditioning equipment. The controls must have integrated timers, and in-booth and outdoor temperature gauges. The controls must be programmable/customizable and have all industry standard functionality.

3.13 Fire Suppression System
The contractor must install an integrated in-booth fire suppression system in accordance with OSHA, NFPA, ANSI, Federal, State and local regulations. The fire suppression system must use sprinklers and be water based. The contractor must connect to FAA provided water-line within 20' of the booth.

3.14 Compressed Air Lines
Two compressed air lines must be integrated into the booth. One compressed air line requires a compressed air line dryer and will be used for paint spraying purposes. The contractor must install the air line dryer. The dried compressed air must connect to four air drops in the corners of the paint booth. The dried compressed air line must be designed with enough pressure for 4 paint sprayers to be used at one time. The second compressed air line must contain breathable air and must also have 4 drops, with each drop located at the same location as the dried compressed air drops. The FAA will provide two compressed air connections, one containing breathable air and the other containing compressed air that the contractor must connect to the dryer they install. Both connections will be within 20' of the booth.

3.15 Power Requirements
The booth must use 3 phase 480 volt power, as is common in industrial settings. The contractor must utilize a licensed electrical (sub)contractor to install all power in the booth and to connect to the FAA provided power source within 20' of the booth.

3.16 Explosion Proofing Requirements
The booth must be provided with proper explosion proof equipment complying with NFPA 70. This includes, but is not limited to, all lighting, heating, and miscellaneous electrical equipment.

3.17 Booth Integrity (Structural, Chemical, Seismic)
The booth panels must be constructed from galvanized steel. Painted steel will be acceptable for structural support. The booth structural design must comply with the structural and seismic requirements in Chapter 16 of the 2003 International Building Code. The paint booth material and finish must be designed to ensure structural strength and chemical resistance to chemicals commonly used in paint operations. All metal parts of the paint booth, exhaust ducts and piping systems must be properly grounded.

3.18 Paint Booth Performance Data
The contractor must provide data on paint booth airflow performance (linear feet per minute and air exchanges), temperature performance (curing temperature and cure cycle time), lighting performance and filter performance to the CO prior to acceptance.

3.19 Drawings
The contractor must provide full design information to AMP-400 and to the CO. This includes, but is not limited to: shop drawings, booth schematics, outdoor work plans, and utility requirements. The full design information is to be provided within 45 days of award.

3.20 Crane Permit
The contractor must apply for a crane permit if any outdoor work will take place that is over 27’ in height and requires a crane. This permit must be coordinated with the Department of Airports.

3.21 Operations and Maintenance Training
Within 5 days after commissioning the contractor must provide a session of Operation and Maintenance Training for up to 20 people. Operation and Maintenance Manuals and warranty information must be provided in digital and print copies to the CO before the training session.

4. INSTALLATION REQUIREMENTS

Contractor must supply all parts, labor and equipment necessary to permanently install the enclosed paint booth in its designated location. The MMAC Architecture and Engineering Division (AMP-400) will handle the site preparation, connect the paint booth to commercial power, and complete other like support activities to ensure the full operational capability of the enclosed paint booth. The Contractor must effectively collaborate with AMP-400 by providing information about the paint booth design, location, wall penetration dimensions and locations, and air make-up unit size and location. In addition the contractor must provide information including, air-line pressure requirements, gas line requirements, power requirements and sprinkler system water requirements. All this information will be necessary for the site prep which must be completed BEFORE the contractor can complete installation work. As part of the site prep AMP-400 will demolish the north and west wall of the former woodshop and create a new wall to the east.

5. COMMISSIONING

A walk-through will take place within 5 days of completion, with the Contractor, the MMAC Logistics Center Product Services Division (AML-4000) and the MMAC Facilities Services Division (AMP-100) participating. AML-4000 will verify that the enclosed paint booth is fully functional. AMP-100 will verify the OSHA and NFPA compliance of the enclosed paint booth. The contractor must demonstrate functionality and compliance and FAA personnel will observe. This commissioning must occur prior to acceptance. All deficiencies must be rectified by the Contractor at no extra charge to the Government.

6. JOB CONDITIONS

6.1 Delivery/Storage/Handling

The Contractor must coordinate delivery of materials and equipment with the COR. The Contractor must confine the movement and storage of vehicles, equipment, and materials to such routes, times, and locations, as may be designated by the COR. Work and storage space is limited at the site. The Contractor is responsible to secure additional storage off site, if required, at no additional cost to the FAA. Materials subject to moisture damage must be stored off the ground and covered (or stored inside as may be approved by the COR). Materials damaged in handling, storage, construction traffic, etc., will be rejected and replaced at the Contractor's expense.

6.2 Protection of Existing Property

See the applicable contract clause. The Contractor is responsible for any damages to property caused by the Contractor's activities.

6.3 Cleanup

The Contractor must remove all debris resulting from their work from the premises at the site and dispose of properly on a daily basis, or as directed by the COR. Also, a final cleanup must be conducted when the work is complete and prior to final inspection.

6.4 Power

Electrical power required for the construction work will be made available to the Contractor at no cost. The Contractor, at their expense, must provide all temporary connections, fittings, etc., from the source to the point of use. Arrangements for use of these facilities must be coordinated with the COR.

7. GENERAL

7.1 Pre-Construction Meeting

The Contractor is required to attend a post-award pre-construction meeting to review contract requirements, safety and environmental issues, schedules, required reports/submittals, etc. and to establish contacts to be used during the contract. The CO will coordinate the location and time of the meeting after contract award. The meeting may be held via teleconference.

7.2 Pre-Work Site Meeting

A site visit or teleconference must be made by the Contractor's key personnel who will be performing the on-site work to discuss disposal areas for any removed materials, procedures for working around the operating facility, etc. The date and time for this meeting will be separate from and occur after the pre-construction meeting (may be held immediately subsequent to that meeting if so arranged).

7.2.1 Pre-Work Site Meeting Details

This is an FAA facility operating 8 hours per day, 5 days per week whose functions cannot be compromised during performance of this work. The work must be accomplished in such a manner as to minimize the impact on the facility operation, by not obstructing the activities of other employees near to the work area. Work must be completed during normal business hours, between 7:00 a.m. and 4:30 p.m. (for exceptions see 7.4). Following the pre-construction meeting held by the CO, the Contractor must arrange for an on-site meeting prior to beginning work. Present for the meeting will be the Contractor's key personnel who will direct the field workmen and key FAA facility personnel. Site information and facility operations traffic and parking patterns affecting the work must be discussed during the meeting as needed for the Contractor to finalize plans and prepare for the work. The Contractor must refer to and be completely familiar with the information contained within these specifications and other contract documents before making the site visit.

7.3 Contractor Personnel

Work must be accomplished by skilled personnel, experienced in the types of work to be performed and certified in accordance with State and Federal Law. All labor, construction procedures, etc. must be in strict conformance with rules, regulations, and recommendations of OSHA, National Electric Code (NEC), municipal and State codes, National Building Code, or any other authorities having local jurisdiction pertaining to the work. If noxious or objectionable products are to be used the Material Safety Data Sheets (MSDS) for those products must be provided to CO prior to construction. An effort must also be made to use the objectionable product outside of peak operational hours (see 7.4).

7.4 Night/Weekend Work

Work at the site must be accomplished between the hours of 7:00 a.m. and 4:30 p.m., Monday through Friday. However, the Contractor may choose to perform portions of the work outside of peak operational hours at night or during weekends as approved by the COR. After hours work must be coordinated 48 hours in advance.

7.5 Compliance with Regulations

The Contractor must comply with the latest OSHA regulations Title 29 Code of Federal Regulations (CFR) regarding safety in the work area. The Contractor must also comply with applicable Federal and State laws and regulations concerning human health and environmental protection, including those pertaining to air and water pollution, and the disposal of solid and hazardous wastes, substances and materials. The Contractor must consult the latest referenced OSHA, Environmental Protection Agency (EPA), State, and local documents for pertinent regulations. In the event of an emergency or drill the contractor employees must follow diagrammed exit procedures which are posted in numerous locations in the area.

8. OPTIONS

8.1 Heat Recovery System

The make-up air system must have a heat recovery system. In the make-up air system the warm exhausted air will be used to heat the cooler intake air. The exhaust air duct and the intake air duct will come together at the heat exchanger site. A cross flow heat exchanger or a counter flow heat exchanger design must be used and the intake and exhaust air must always be separated by a solid wall.

8.2 Prep Mode HVAC

In the paint booth prep mode air must be ducted in from an existing interior HVAC duct and recirculated. In this mode neither spraying or curing will be occurring, employees will just be moving parts in and out and doing prep work. The contractor must connect to the HVAC duct which the FAA will provide within 20' of the booth. The contractor must fully integrate the air duct with the existing paint booth, so that it provides recirculating air during prep mode and is shut off automatically by a damper during spray and cure modes.